To the study of phytoplankton of urban ponds in the south-east of the Republic of Tatarstan in Russia

К изучению фитопланктона городских прудов юго-востока Республики Татарстан России

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The purpose of this work was to determine quantitative indicators and assess water quality from phytoplankton samples collected in ponds located in the central part of Leninogorsk, Bugulma and Aktanysh of the Russian Federation in June 2016.

Collection and study of phytoplankton samples were carried out according to generally accepted hydrobiological methods (Methodology of Study ..., 1975) using freshwater algae determinants (Hollerbach, Polyanskii, 1951; Zabelina et al., 1951; Kiselev, 1954; Matvienko, 1954; Popova, 1955; Dedusenko-Schegoleva et al., 1959, Kosinskaya, 1960, Dedusenko-Schegoleva, Gollerbach, 1962, Gollerbach et al., 1963, Palamar-Mordvintseva, 1982, Diatoms ..., 1988, 1992, Genkal, 1992, Tsarenko, 1990).

In the phytoplankton samples from pond in Aktanysh, 30 algae taxons were determined below the genus of six divisions. The number of species is dominated by green ones - 14 taxons (47% of the total number of species), diatoms - 7 species (23%), followed by euglenic - 4 species (13%), blue-green and golden algae - 2 species (7 %), 1 species belongs to the department of dinophyte (3% of the total number of species encountered in the pond). The number of species from the stations of research varied from 13 to 23 species. The phytoplankton population by stations varied from 214.83 t. cells / l to 1679 t. cells / l. The total biomass in the stations varied from 1.9076177 mg / l to 16.45238 mg / l.

In 10 samples of the phytoplankton from pond in Leninogorsk, 29 algal taxons were determined below the genus of five divisions. The number of species is dominated by the green ones - 12 representatives (41% of the total number of species), diatoms - 11 species (38%), followed by euglenic, blue-green and golden algae - 2 species (7% each). The number of species from the stations of research varied from 5 to 13 species (at stations 5 and 7). The phytoplankton abundance at the research stations varied from 38.88 t. cells / l to 249.51 t. cells / l. The total biomass in the stations varied from 0.33485 mg / l to 1.463761 mg / l.

The number of species is dominated by the green - 11 representatives (39% of the total number of species), diatoms - 8 species (28%), followed by euglenic - 4 species (14%), blue-green and golden algae - 2 species (7 %), 1 species belong to the department of dinophyte (3%). The number of species from the stations of research varied from 5 to 17 species. The phytoplankton abundance at the research stations varied from 45.44 t. cells / l to 9145.66 t. cells / l. The total biomass in the stations varied from 0.234613 mg / l to 24.7027 mg / l.

According to the results of the research, the reservoirs are characterized as highly trophic, with a moderately high content of organic matter corresponding to the period of the vegetation season of the reservoirs of the Central Russia (the spring peak of "flowering" has already passed and the summer one has not yet come). By mass, representatives of green algae (small-cell colonial forms) prevail, quantitative indicators also indicate the dominance of the euglenic section, which also indicates a high content of organic matter. Mass "flowering" of chlorococcal - a response to the supply of nutrients with a surface runoff in spring, along with a large number of representatives of the diatom department, which may indicate the presence of groundwater recharge and indicates the flow of water bodies.